Amendments to the Claims

Please cancel claim 1. This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Cancelled)

2-52. (Previously Cancelled)

53. (New) A method, comprising the following:

a user control accepting a user input which specifies a cutting efficiency;

outputting atomized fluid particles from the atomizer into an interaction zone, the interaction zone being defined as a volume above the target;

focusing or placing a peak concentration of electromagnetic energy onto at least a portion of the atomized fluid particles in the interaction zone, the electromagnetic energy having a wavelength which is substantially absorbed by the portion of atomized fluid particles in the interaction zone; and

the portion of atomized fluid particles in the interaction zone highly absorbing the electromagnetic energy, expanding, and imparting disruptive forces onto the target.

54. (New) The method according to Claim 53, wherein the outputting of atomized fluid particles from the atomizer into an interaction zone above the target surface includes outputting atomized water particles from the atomizer into the interaction zone above the target.

55. (New) The method according to Claim 54, wherein the focusing or placing of a peak concentration of electromagnetic energy onto the atomized fluid particles in the interaction zone comprises focusing or placing a peak concentration of electromagnetic energy from one of an Er, Cr:YSGG solid state laser having a wavelength of about

2.789 microns and an Er:YAG solid state laser having a wavelength of about 2.940 microns, onto the atomized water particles in the interaction zone.

56. (New) The method according to Claim 53, wherein the target comprises one of tooth, bone, cartilage and soft tissue.

57. (New) The method according to Claim 53, wherein the step of outputting atomized fluid particles from an atomizer includes a step of outputting atomized fluid particles from an atomizer that is connected to an air supply line and a water supply line, wherein air and water are mixed by the atomizer to form the atomized fluid particles.

58. (New) The method according to Claim 57, wherein the air supply line is operated under a relatively high pressure and the water supply line is operated under a relatively low pressure.

59. (New) The method according to Claim 58, wherein the atomized fluid particles have sizes narrowly distributed about a mean value.

60. (New) The method as set forth in Claim 53, wherein the electromagnetic energy source comprises one of a wavelength within a range from about 2.69 to about 2.80 microns and a wavelength of about 2.94 microns.

61. (New) The method as set forth in Claim 53, wherein the laser comprises one of an Er:YAG, an Er:YSGG, an Er,Cr:YSGG and a CTE:YAG laser.

62. (New) A method, comprising:

generating a combination of atomized fluid particles;

placing the combination of atomized fluid particles into a volume adjacent to a

target; and

directing a peak concentration of electromagnetic energy, which has a wavelength that is substantially absorbed by the atomized fluid particles, into the volume so as to be absorbed by at least a portion of the atomized fluid particles to cause the portion of atomized fluid particles to impart disruptive mechanical forces to the target.

63. (New) The method as set forth in Claim 62, wherein the electromagnetic energy has one of a wavelength within a range from about 2.69 to about 2.80 microns and a wavelength of about 2.94 microns.

64. (New) The method as set forth in Claim 62, wherein the electromagnetic energy is generated by one of an Er:YAG, an Er:YSGG, an Er,Cr:YSGG and a CTE:YAG laser.

65. (New) The method as set forth in Claim 62, wherein the target comprises one of tooth, bone, cartilage and soft tissue.

66. (New) The method as set forth in Claim 62, wherein the atomized fluid particles comprise water.

67. (New) The method as set forth in Claim 62, wherein the electromagnetic energy is generated by one of an Er, Cr:YSGG solid state laser having a wavelength of about 2.789 microns and an Er:YAG solid state laser having a wavelength of about 2.940 microns.

68. (New) The method as set forth in Claim 62, wherein the electromagnetic energy is highly absorbed by at least a portion of the atomized fluid particles to cause at least part of the portion of atomized fluid particles to expand and impart disruptive

mechanical forces to the target.

69. (New) A method, comprising:

focusing or placing a peak concentration of electromagnetic energy into an interaction zone above a target;

outputting atomized fluid particles from a plurality of atomizers into the interaction zone; and

at least a portion of the atomized fluid particles in the interaction zone highly absorbing at least a portion of the electromagnetic energy, expanding, and imparting disruptive forces onto the target.

70. (New) The method as set forth in claim 69, wherein the focusing or placing of a peak concentration of electromagnetic energy into an interaction zone comprises focusing or placing a peak concentration of electromagnetic energy into an interaction zone located at an output end of a fiber guide tube.

71. (New) The method as set forth in claim 70, wherein:

the outputting of atomized fluid particles from a plurality of atomizers comprises outputting atomized fluid particles from the plurality of atomizers toward the output end of the fiber guide tube; and

atomized fluid particles from a first one of the plurality of atomizers combine with atomized fluid particles from a second one of the plurality of atomizers in the interaction zone.

72. (New) The method as set forth in claim 70, wherein:

the outputting of atomized fluid particles from a plurality of atomizers comprises outputting atomized fluid particles from the plurality of atomizers toward the output end of the fiber guide tube; and

an angle of incidence of atomized fluid particles from a first one of the plurality

of atomizers is different from an angle of incidence of atomized fluid particles from a second one of the plurality of atomizers.

73. (New) The method as set forth in claim 72, wherein the fiber guide tube is disposed between the first atomizer and the second atomizer.

74. (New) The method as set forth in claim 72, wherein:

each of the plurality of atomizers has an output axis; and

the output axes all point from the respective atomizers to a general vicinity of the interaction zone.

75. (New) The method as set forth in claim 74, wherein the output axes intersect a longitudinal axis of the fiber guide within the interaction zone.

76. (New) The method as set forth in claim 69, wherein atomized fluid particles from a first one of the plurality of atomizers combine with atomized fluid particles from a second one of the plurality of atomizers in the interaction zone.

77. (New) The method as set forth in claim 69, wherein an output axis of a first one of the plurality of atomizers is not parallel to an output axis of a second one of the plurality of atomizers.

78. (New) The method as set forth in claim 69, wherein:

each of the plurality of atomizers has an output axis; and

the output axes all point from the respective atomizers to a general vicinity of the interaction zone.

79. (New) The method as set forth in claim 78, wherein:

the electromagnetic energy is directed along a path toward the target surface; and

the output axes intersect the path within the interaction zone.

80. (New) The method according to Claim 69, wherein the step of outputting atomized fluid particles from a plurality of atomizers includes a step of outputting atomized fluid particles from atomizers that are connected to air supply and water supply lines, wherein air and water are mixed by the atomizers to form the atomized fluid particles.

81. (New) The method according to Claim 80, wherein each air supply line is operated under a relatively high pressure and each water supply line is operated under a relatively low pressure.

82. (New) The method according to Claim 69, wherein the atomized fluid particles have sizes narrowly distributed about a mean value.

83. (New) The method as set forth in Claim 69, wherein the electromagnetic energy has one of a wavelength within a range from about 2.69 to about 2.80 microns and a wavelength of about 2.94 microns.

84. (New) The method as set forth in Claim 69, wherein the electromagnetic energy is generated by one of an Er:YAG, an Er:YSGG, an Er,Cr:YSGG and a CTE:YAG laser.

85. (New) The method as set forth in Claim 69, wherein the target surface comprises one of tooth, bone, cartilage and soft tissue.

86. (New) The method as set forth in Claim 69, wherein the atomized fluid particles comprise water.

87. (New) The method as set forth in Claim 69, wherein the electromagnetic energy is generated by one of an Er, Cr:YSGG solid state laser having a wavelength of about 2.789 microns and an Er:YAG solid state laser having a wavelength of about 2.940 microns.

88. (New) The method as set forth in Claim 69, wherein the electromagnetic energy is highly absorbed by at least a portion of the atomized fluid particles to cause at least part of the portion of atomized fluid particles to expand and impart disruptive mechanical forces to the target surface.

89. (New) The method as set forth in Claim 69, wherein the atomized fluid particles are simultaneously output from the plurality of atomizers into the interaction zone..

90. (New) The method according to Claim 53, wherein the user control includes a dial for controlling a repitition rate of the electromagnetic energy.

91. (New) The method according to Claim 53, wherein the user control includes a dial for controlling an average power of the electromagnetic energy.

92. (New) The method as set forth in claim 69, wherein the plurality of atomizers is two atomizers.

93. (New) The method as set forth in claim 74, wherein the output axes intersect a longitudinal axis of the fiber guide near or in the interaction zone.

94. (New) The method as set forth in claim 78, wherein:

the electromagnetic energy is directed along a path toward the target surface; and

the output axes intersect in a general vicinity of the path near or in the interaction zone.